

SONY

White paper

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XPERIA acro HD
IS12S

Purpose of this document

Sony product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

Document history

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Sony Mobile Developer World

For the latest technical documentation and development tools, go to <http://developer.sonymobile.com/wp>.

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Table of contents

Product overview	4
Sony Xperia™ acro HD – Experience everything in HD	4
Signature features	6
Facts – dimensions, weight, performance and networks	7
Categorised feature list	9
Technologies in detail	11
Device-to-device communications (local)	11
Bluetooth™ wireless technology	11
FeliCa™	12
Wi-Fi®	13
DLNA Certified® (Digital Living Home Alliance)	14
Messaging	15
Email	15
Positioning – location based services	16
Provisioning (OMA CP)	16
Multimedia (audio, image and video)	17
Digital TV (1seg)	18
Synchronisation (OMA DS, EAS, Google Sync™)	18
Web browser	19
Trademarks and acknowledgements	20

Product overview

Sony Xperia™ acro HD – Experience everything in HD

Happy faces, remarkable places. Shoot them in full HD video and see them shine back from the crisp clear HD display. Then move on to a wider world of entertainment. Movies, hit music, PlayStation® games. And don't keep all the fun to yourself. Share it on your HD TV, straight from your smartphone.

See every detail

See every inch of that award-winning actor. Zoom in on every detail of your favourite TV show. Experience videos, photos and TV in deep, vivid, colour on the large, bright 4.3" HD Reality Display with Mobile BRAVIA® Engine. Sharp pictures. No jagged edges. Merely the terrific entertainment in HD.

Snap your shots in an instant

Some events are too good to miss. Now you don't have to. Start your camera in just over a second. Pointing and shooting takes one second too. And you can keep on shooting. No delays, no missing the subject. Just you capturing that special moment forever. Then share it direct, on Facebook™ or in a message.

Show it like it is

First day of the summer, last day at the beach. Memories may fade, but Xperia™ acro HD keeps them bright. Record it all in full HD video with the 12.1 megapixel camera, even in low light. The Exmor R™ for mobile camera sensor lightens up any gloomy day.

Got it on your smartphone? Share it on your TV

Want to be entertained? Download a movie from Video Unlimited™*. Connect Xperia™ acro HD to an HD TV with an HDMI cable and the TV launcher pops up automatically. Now use your phone to play, fast forward, or enjoy your favourite scene again.

**Sony Entertainment Network with Video Unlimited™ and Music Unlimited™ are not available in all markets. Additional charges may apply.*

The Japanese touch

Stay tuned to the latest news or your favorite program even when you are away from home on the 1 seg TV. Share your personal information by IrDA with friends and use the convenient FeliCa application for all your financial transactions. Xperia™ acro HD will touch the life of every Japanese user.



Signature features

The Sony Xperia™ acro HD comes with a range of features as standard. Below is a summary of the key signature features.

Xperia™ Timescape™

Communication made easy

The Timescape™ application manages all your communication with one person in one place. You can effortlessly browse by category your Facebook™, Twitter™ communications, as well as view your photos. Now everything is all together and in chronological order, so you don't have to open different applications to see what's going on.

Xperia™ Infinite button

Everything you want – from everywhere

Tap the infinite button in the Timescape™ application and smart filter each category of communication by person. For example, when viewing a text message from a friend in Timescape™, tap the infinite button to view a list of all chat messages with that friend.

Xperia™ Local connectivity

More control over your media

Using Sony Local connectivity, you can exercise more control over how media files get transferred and stored. For example, you can select MTP mode to transfer files if you want to limit the risk of data corruption or select MSC mode if you want to have more control over the data storage.

Xperia™ Home screen application

The place you call Home

Customise your Home screen with widgets, shortcuts, folders, themes, wallpaper and other items. Where's best for you? Email top right? Music player bottom left? You decide. With four extensions to your Home screen, you've got plenty of space to put things where you want. Just remember to flick left or right to find them.

Facts – dimensions, weight, performance and networks

Operating system	Google™ Android™ 2.3 (Gingerbread)
Processor	1.5 GHz Qualcomm MSM8660 Dual Core
GPU	Adreno™ 220
Size	126 x 66 x 11.9 mm
Weight	149 grams
Available colours	Black White Rouge
Main screen	
Colours	16,777,216 colour TFT
Resolution	1280x720 pixels
Size (diagonal)	4.3 inches
Scratch-resistant	Shatter proof sheet on scratch-resistant glass
Input mechanisms	
Text input	POBox™ touch (Japanese)
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 10 fingers supported
Memory	
Internal phone storage	2 GB***
RAM	1 GB
Flash memory	11 GB eMMC
Expansion slot	microSD™ card, up to 32 GB
Camera	
Camera resolution	12.1 MP
Digital zoom	16x
Photo flash	Yes – Pulsed LED
Video recording	Yes – HD 1080p
Front Camera	Yes – HD 720p for video chat and 1.3 MP for camera capture
Sensors	
Accelerometer	Yes
Proximity sensor	Yes

Ambient light sensor**	Yes
Magnetometer	Yes
Gyroscope	Yes
Networks	
IS12S	CDMA 2000 BC0/6 HSPA+ 850 (Band V), 2100 (Band I) GSM 850/900/1800/1900
Data transfer speeds	
EV-DO Rev.A+	Up to 9.2 Mbps (download). Up to 5.5 Mbps (upload)
Talk time (GSM)	Up to 8 hours 10 min.*
Standby time (GSM)	Up to 440 hours*
Talk time (UMTS)	Up to 8 hours 50 min.*
Standby time (UMTS)	Up to 410 hours*
Talk time (CDMA 2000)	Up to 9 hours 30 min.*
Standby time (CDMA 2000)	Up to 330 hours*
Music listening time	Up to 26 hours*
Video playback time	Up to 6 hours 30 min.*
Embedded Battery	1900 mAh typical 1840 mAh minimum







*** Some portion of that capacity may be utilized by pre-installed applications.




** There is no API for the light sensor.

* Talk time/Standby time(GSM/UMTS) is according to the operator's condition for Battery Life Measurement.

NOTE: Battery performance may vary depending on network conditions and configurations, and phone usage.

Categorised feature list

 <p>Camera 3D Sweep Panorama 12.1 megapixel camera 16x digital zoom Auto focus Aperture f/2.4 Exposure value Face detection Flash/Pulse LED Front-facing camera (1.3 MP) Geotagging HD video recording (1080p) Image stabiliser Red-eye reduction Smile detection Sony Exmor R™ for mobile image sensor Touch focus Video light Video recording White balance</p>	 <p>Music Album art Bluetooth™ stereo (A2DP) Music tones (MP3/AAC) PlayNow™ service* Music Player TrackID™ music recognition* xLoud™ Experience</p>	 <p>Internet au One Bookmarks Google Maps™ for Mobile with Google Latitude™ and Street View* Google™ search* Google Voice™ Search* Google Play™ Pan & zoom Web browser (WebKit™) Web Filtering</p>
 <p>Communication Call list Call Waiting Facebook™ application* GlobalPassport GSM/UMTS Google Talk2™ application* Noise suppression Polyphonic ringtones SIP Xperia™ Timescape™ Speakerphone Three-Way Calling Service Twitter™ (Timescape™ integration)* Skype™ Vibrating alert</p>	 <p>Messaging C-mail @mail Gmail™* Instant messaging Predictive text input Sound recorder</p>	 <p>Design Auto rotate Gesture input Gyroscope Keyboard (on-screen, 12 key) Keyboard (on-screen, QWERTY) Keyboard (on-screen, 50-character) Reality Display with Sony Mobile BRAVIA® ENGINE Screenshot capturing Touch screen Wallpaper Water resistant</p>

 <p>Entertainment</p> <ul style="list-style-type: none"> 3D games Digital TV (1seg) Accelerated Adobe Flash Video Media browser Motion gaming PlayStation® Certified Radio Sony Entertainment Network* TV launcher Video streaming YouTube™* 	 <p>Organiser</p> <ul style="list-style-type: none"> Alarm clock Airplane mode Calculator Calendar Contacts Document readers eCompass™ FeliCa Google Calendar™* Google Gallery 3D* Infinite button OfficeSuite Pro Setup guide Widget manager 	 <p>Connectivity</p> <ul style="list-style-type: none"> 3.5 mm audio jack (CTIA) aGPS* Bluetooth™ wireless technology DLNA Certified® GLONASS* HDMI support IrDA™ Media Transfer Protocol support Micro USB support Native USB tethering PC Companion Synchronisation via Microsoft® Exchange ActiveSync® USB mass storage USB High speed 2.0 support Wi-Fi® Wi-Fi® Hotspot functionality
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* This service is not available in all markets.

Technologies in detail

NOTE: The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Mobile Developer World or your Sony contact person where applicable.

Device-to-device communications (local)

Bluetooth™ wireless technology

Bluetooth™ profiles supported	Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v.1.0 Handsfree Profile v1.5 Headset Profile v1.1 Object Push Profile v1.1 Phonebook Access Profile v1.0 Serial Port Profile v1.1
Core version and supported core features	Advanced Audio 2.1 + EDR
Connectable devices	Products supporting at least one of the profiles above.

More information:

<http://developer.sonymobile.com/wp>

www.bluetooth.com

IrDA

Supported standards	IrReady
Data transfer rate	IrDA SIR: up to 115.2 kbps
Maximum transfer data size	Up to 2MB

Data Communication	
Sending of Data	Comment
Contacts (include MyProfile)	The phone has support for transfer of one or all contacts, including MyProfile.
Picture	The phone has support for transfer of single picture file. Supported format is according to Android standard.
Movie	The phone has support for transfer of single movie file. Supported format is according to Android standard.
Music	The phone has support for transfer of single music track. Supported format is according to Android standard.
Reception of Data	Comment
All file formats can be received.	Files in non-supported formats are stored in internal memory.

FeliCa™

Mobile FeliCa Client	Ver 2.1.1
Card mode	Yes
R/W	Yes (Internal card / External card)
Ad-hoc	Yes
FALP	Yes

Wi-Fi®

Supported standards	IEEE 802.11b/g/n and Wi-Fi®
Connectable devices	Wi-Fi® access points
Frequency band	2.4 GHz
Data transfer rate	Up to 72 Mbit/s
Security	WEP 64 bit WEP 128 bit Wi-Fi Direct TKIP CCMP (AES) Open Authentication Shared Authentication EAP-SIM EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise
Encryption	WEP, TKIP and AES
Power save	WMM-UAPSD QoS, WMM
Auto setup	WPS

DLNA Certified® (Digital Living Home Alliance)

Supported Device Classes	<p>M-DMS – Mobile Digital Media Server Media Types: images Summary: The digital media server exposes the media files in your phone to a Wi-Fi® network. The files can then be accessed from other DLNA Certified® clients.</p> <p>+PU+ Media Types: image, video and music Summary: Play media in the phone on another device, such as a TV or computer using 2 box push technology. +PU+ is integrated in the Gallery and Music applications.</p> <p>M-DMP – Mobile Digital Media Player Media Types: image, video and music Summary: Play content stored on another device, for example, a server or a PC, directly on the phone.</p>
Supported Bearers	<p>Wi-Fi® Wi-Fi Direct</p>
DRM Support	The Sony DLNA Certified® implementation does not support DRM-protected content.

Messaging

Email

Bearer type (IP)	CDMA2000 1x, EVDO, GSM, GPRS, EGPRS, UMTS
Character sets	BIG5 Traditional Chinese GB18030 ISO-2022-JP Japanese ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO 8859-11 KOI8-R Cyrillic Shift_JIS Japanese USASCII UTF-16 UTF-8 Windows® 874 Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1258 Vietnamese
Protocols	POP3 and IMAP4
Push email	Microsoft® Exchange ActiveSync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and START-TLS
HTML mail	Yes (read only)

More information:

<http://developer.sonymobile.com/wp>

www.openmobilealliance.org

Positioning – location based services

Supported standards:

- OMA Secure User Plane Location (SUPL) v1.0
- 3GPP™ Control Plane location (incl. Emergency location)
- Qualcomm® GPSTOneXTRA™

Supported satellite systems:

- GPS
- GLONASS*

* **NOTE:** GPS and GLONASS are used together to calculate the position. Positioning is more robust and accurate in most conditions, if both systems are active. The benefits of using GLONASS are automatically available for all applications using the Satellite Positioning API ("GPS Provider" in Android terminology).

Provisioning (OMA CP)

OMA CP version 1.1

Multimedia (audio, image and video)

Audio Playback	Decoder format	Supported in file format
	Audio decoding MPEG-1/2/2.5, audio layer 3	MP3 (.mp3), 3GPP (.3gp), MP4 (.mp4, .m4a)
	AAC, AAC+, eAAC+	3GPP (.3gp), MP4 (.mp4)
	AMR-NB, AMR-WB	3GPP (.3gp)
	General MIDI (GM)	SMF (.mid)
	Linear PCM 16bit	WAV (.wav)
	OTA	OTA (.ota)
	Ogg vorbis	Ogg vorbis (.ogg)
Audio Recording	Encoder format	Supported in file format
	AMR-NB, AMR-WB	3GPP (.3gp)
	AAC-LC stereo, sample rate 48 kHz bit rate 128 kbps	3GPP (.3gp), MP4 (.mp4)
Image Playback	Decoder format	Supported in file format
	1, 4, 8, 16, 24 and 32 bpp and RLE encoded formats	BMP (.bmp)
	Single and multi-frame, bitmap mask support (GIF87a format and GIF89a format)	GIF (.gif)
	Joint Photographic Experts Group	JPEG (.jpg)
	Portable Network Graphics Bitmap mask support	PNG (.png)
Image Capture	Encoder format	Supported in file format
	Joint Photographic Experts Group	JPEG (.jpg)
Video Playback	Decoder format	Supported in file format
	MPEG-4 Visual Simple Profile, Advanced Simple Profile Level 6	3GPP (.3gp), MP4 (.mp4)
	H.264 Baseline/Main/High Profile Level 4	3GPP (.3gp), MP4 (.mp4)
	H.263 Profile 0, Profile 3 Level 70	3GPP (.3gp), MP4 (.mp4)
Video Recording	Encoder format	Supported in file format
	Video H.263 Profile 0, H.264 Baseline Profile Audio: AAC-LC stereo, sample rate 48 kHz bit rate 128 kbps	3GPP (.3gp), MP4 (.mp4)

Audio/Video Streaming	Streaming transport	RTSP according to 3GPP™ HTTP streaming
DRM	DRM (Digital Rights Management) – features the rights and copy protection of downloaded content	OMA DRM 1.0 Marlin DRM

Digital TV (1seg)

Data Broadcasting	Supported
Caption	Supported
Recording	Not supported
Viewing reservation	Not supported
Recording reservation	Not supported
G-Guide application	Supported (only IPG)

Synchronisation (OMA DS, EAS, Google Sync™)

OMA Data Synchronisation protocol versions 1.1.2 and 1.2

OMA Data Formats: vCard 2.1, vCalendar 1.0

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12

Microsoft® Exchange ActiveSync® protocol version 12.1

Google Sync™

Related information:

<http://developer.sonymobile.com/wp>

Web browser

Browser version	Android 2.3 Browser (Based on WebKit™)
Navigation/rendering	Adobe™ Flash™ 11* Full page PC rendering Landscape/portrait rendering Pan & Zoom
Search	Internet Search
Browser compliancy	CSS 2.0 CSS 2.1 CSS 3.0 DOM 2.0 DOM 3.0 HTML version. 4.0 HTML version. 5.0 JavaScript 1.7/ECMA-script 262 3rd edition WebGL 1.0 XHTML Basic version 1.0 XHTML 1.1
Supported Device API	Geo-location API
Protocol compliancy	Gzip HTTP/1.1 OMA Download 1.0 TLS 1.0 and SSL 3.0

* Updates are distributed via Android market™.

Related information:

<http://developer.sonymobile.com/wp>

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